

Interdisciplinary End Project (E711062)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0

Study time 180 h

Course offerings and teaching methods in academic year 2023-2024

A (semester 2)	Dutch	Gent	lecture
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Lecturers in academic year 2023-2024

Deruyter, Greet	TW15	lecturer-in-charge
Pollefliet, Leen	TW05	co-lecturer

Offered in the following programmes in 2023-2024

	crdts	offering
Linking Course Master of Science in Civil Engineering Technology	6	A
Linking Course Master of Science in Land Survey Engineering Technology	6	A

Teaching languages

Dutch

Keywords

Research, project, simulation, analysis, comparative study, survey, literature.

Position of the course

This course is part of the engineering and research learning trajectories.

1. Embedding of the research in the educational program:
 - ongoing research in research groups linked to the educational program, in particular PhD research
 - ongoing provision of services by departments linked to the educational program
 - research projects financed by third parties
2. *The goal of the bachelor thesis is:*
 - acquiring a research attitude and research skills.
 - performing a limited research project in a team and report scientifically on the research
3. The anchorage of the internationalization in the curriculum of the student.

Contents

Learning and practicing:

1. Formulating a problem definition and research questions.
2. Formulating the research methodology.
3. Literature review with correct use of references, bibliography. The emphasis is on the use of AI articles and positioning the research in an international context.
4. Research in engineering, surveying.
5. Drawing and formulating conclusions.
6. Writing a research report and a scientific paper.
7. Presenting the research results.

Lectures

- Structure of research report
- Communication: Writing a bachelor thesis and Presenting
- Research and research output
- Guest lecture:
 - responsibilities and liabilities of engineers
 - corporate social responsibility in the construction sector
 - trade-off between economical and sustainability aspects, work-life balance, ...
 - dealing with foreign workers and labor conditions
 - ...

Sustainability is an important aspect in the topics offered to the students and the realization of each project.

Initial competences

The student must have a:

- general scientific training.
- general technical training.
- basic knowledge in the field of engineering or land surveying

This course unit can only be taken as the last bachelor course, cf the Curriculum Rules of the Faculty of Engineering and Architecture (<https://www.ugent.be/ea/en/for-degree-students/your-studies-in-ghent/curriculum.htm>). This course builds on the final competences of the previous courses of the bachelor's programme.

Final competences

- 1 Assimilate, implement and apply existing and new theories and/or techniques.
- 2 Apply research methods and techniques adequately within an uncertain context.
- 3 Collect and process relevant scientific and technical information and refer to it correctly.
- 4 Plan scientific research independently and in team, with attention to boundary conditions.
- 5 Demonstrate self-reliance, precision, assertiveness, perseverance and critical reflection in constructively solving a problem.
- 6 Use the scientific and discipline-specific technical terminology correctly.
- 7 Communicate adequately on own work, both in written and orally.
- 8 Function as a team member.
- 9 Pay attention to environmental aspects, quality, safety, sustainability and (research) ethics.

Conditions for credit contract

This course unit cannot be taken via a credit contract

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, Lecture

Learning materials and price

Project work:

- Expenses payed for by the student: communication cost (cell phone, postal charges, ...), travel costs, consultation of documents (estimated cost: 50 euros)

Communication part (learning path from the first bachelor up to the first master's year)

- Syllabus: 'Communicatie in drie modules' (250 pages, available on via the electronic learning platform), to be used from the first bachelor's year up to the first master's year (and afterwards).
- Handbook: 'Schrijven: van verslag tot eindwerk - do's & don'ts' (Academia Press, laatste editie, ISBN 9789401452595), price: 26 euros. Compulsory handbook for the communication partim on writing (reports, bachelor's thesis, master's dissertations), purchased in the first bachelor's year (Engineering Project) and to be used from the first bachelor's year up to the first master's year (and afterwards).
- From 2024-2025 onwards: Handbook: 'Scoren met je scriptie - Het standaardwerk voor verslagen, rapporten en projecten, off- en online' (355 pages + QR codes to instructional videos and interactive language and writing exercises) - Owl Press (<https://borgerhoff-lamberigts.be/boeken/scoren-met-je-scriptie>, ISBN 9789463937276), student price 30 euros: compulsory handbook for the communication partim on writing (reports, bachelor's thesis, master's dissertations), to be used from the first bachelor up to the first master's year (and afterwards).
- PowerPoint presentations/hand-outs/knowledge clips on writing and presenting available on the electronic learning platform.

References

Communication partim (learning path from the first bachelor up to the first master's year): 'Bij wijze van spreken – Het standaardwerk voor mondelinge communicatie' (550 pagina's) - Owl Press (<https://borgerhoff-lamberigts.be/owlpress>, ISBN 9789463934381, student price: 39,90 euros).

Course content-related study coaching

During classes members of the teaching staff are available (according to the planning

(Approved)

communicated on the electronic learning environment) and can be addressed for guidance and coaching.

Outside the classes: by appointment and by mail.

Promotors are available by appointment.

Assessment moments

continuous assessment

Examination methods in case of permanent assessment

Participation, Presentation, Peer and/or self assessment, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

All projects are to be completed as teamwork. All team members are responsible for the final result. Each member is expected to contribute equally to each step in the project and the final result. Therefore, peer evaluation is used to differentiate the resulting score among the team members. *The criteria and the impact of the peer evaluation are made available through the electronic learning environment.*

The assignments are handed in on a beforehand communicated date and time, according to the imposed modalities. Projects handed in after expiration of the deadline or not in accordance with the modalities, will be considered absent.

Sustainability is a key value for UGent: both the final version of the dossier and the intermediate versions are handed in electronically.

Frequency of permanent evaluation:

- preliminary review of the literature study and the problem definition.
- preliminary review of the research goals and the research approach
- preliminary review of the scientific article
- final evaluation of the research and the research report
- final evaluation of the scientific article
- evaluation of the oral presentation

Unjustified absences will be graded zero in the permanent evaluation.

Calculation of the examination mark

- Permanent evaluation: 10 %
- Research report: 70%
- Paper: 10 %
- Oral presentation: 10 %

Peer evaluation is applied on de results for the research report, the paper and the oral presentation.

The project results must be handed in on the date and the hour announced on the electronic learning environment. Projects handed in after the deadline will not be accepted for the current examination period and will be assigned the mark absent.

If a team member is absent without proper justification during the oral presentation, he/ she cannot pass the course and will have to orally present the project individually during the next examination period.